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ABSTRACT

A two-dimensional model proposing three predictor dimensions (cognitive, noncognitive, and combined) and four criterion dimensions (grade point average (GPA), enrolled or not, graduate or not, and less traditional criteria) is presented. Preliminary results of a study using the model to examine both white and minority student predictors of retention is discussed. It is shown that for the first semester GPA, there appears to be a strong relationship between the seven noncognitive predictors and retention, especially for minority students. When Scholastic Aptitude Test (SAT) scores were used with noncognitive measures, many of the previously significant noncognitive items were no longer significant, especially in the white sample. This trend occurred less in the minority analsyes. It is suggested that, for whites, these noncognitive predictors are tapping dimensions that overlap or are related to the traditional SAT scores, but this is not true for blacks. For blacks, traits separate from what is tapped by SAT scores appear to be related to GPA for the first semester in college. (Author/LB)

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A DESCRIPTION AND ILLUSTRATION OF A MODEL FOR CONDUCTING STUDENT RETENTION RESEARCH

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Research Report # 13-80

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SUMMARY

A two-dimensional model proposing three predictor dimensions (cognitive, noncognitive and combined) and four criterion dimensions (GPA, enrolled or not, graduated or not, and less traditional criteria) is presented and discussed. Preliminary results of a study employing the model which examines both white and minority student predictors of retention is discussed.

For the first semester GPA, there appears to be a strong relationship between the seven non-cognitive predictors and retention, especially for minority students. When SAT scores were used with noncognitive measures, many of the previously significant noncognitive items were no longer significant especially in the white sample. This trend occurred less in the minority analyses. So it appears that, for whites, these noncognitive predictors are tapping dimensions that overlap or are related to the traditional SAT scores, but this is not true for blacks. For blacks, traits separate from what is tapped by SAT scores appear to be related to GPA for the first semester.

A glance through any current journal in the area of student affairs will reveal a number of studies on student retention (Lea, Sedlacek and Stewart, (1979). Retention has become one of the most important issues that administrators must face, now and in the coming decade. The results and conclusions of sound research should form the basis for any actions taken on this topic.

Types of Retention Research

Typically, research done on retention issues can be categorized as falling into one of three approaches. These approaches appear separate and independent because each tends to use a different set of variables to look at the problem. The first approach, that of predicting who will succeed in college, typically correlates traditional variables (high school rank, SAT scores, etc.) with freshman grades. No account is taken of other dimensions that may affect grades, or how the grades may change over the course of one's academic career. The second research approach is that of understanding the characteristics associated with those who do well in school, and how these people differ from those who do not. Typically, studies done in this area involve the examination of differences on personality dimensions between those who stay enrolled and graduate and those who do not. This approach often neglects the relationship of the traditional cognitive variables (SAT scores, h.s. grades, etc.) to eventual graduation. Also, studying retention in this way implies that the only criterion of value is graduation, not GPA. Each criterion appears important in determining what one's retention goals should be. The third type of retention research tends to center on studying how students can be aided. This approach usually involves a program evaluation, and focuses on whether or not a specific program helped in aiding retention by either continued enrollment or increased GPA. Often the specific characteristics (personality and/or attitudinal variables) of those helped and those not helped by the program are ignored. Retention programs need

to cover a broad area in order to be effective, while the research is typically limited in scope and neglects important dimensions. More effort should be directed at the integration of the above three, often non-inclusive, research approaches.

Insert figure 1 about here

An Overall Research Model

One means of obtaining a more comprehensive picture of retention is to include as many dimensions as possible in research designs. There appear to be two dominant dimensions of variables studied, which are depicted in Figure 1: the specific criteria of collegiate success (i.e., GPA, enrollment status, or graduation status) and the predictors related to the criterion used. The predictor variables usually are either the traditional cognitive predictors (e.g., h.s. GPA, SAT scores) or the more recently developed non-cognitive variables (e.g., personality and attitudinal dimensions. Our research model attempts to obtain a clearer picture of retention by incorporating as many of the different success criteria as possible with as many of the different types of predictors as possible. Of particular importance is the combination of the traditional cognitive predictors with the less traditional noncognitive predictors in some analyses. Rarely are these two data types mixed in studies, since the traditional cognitive variables often account for most of the variance. This occurence appears to be a statistical artifact due to the more sound psychometric properties of the cognitive measures. This often occurs becasue developmental research on the noncognitive variables is not done. Thus cognitive and noncognitive areas must be studied separately, and only when we have relatively reliable and valid measures in each area should we combine them in a research study. So the research model that we are operating under is to utilize as many criteria of college success as possible with respect

to the different predictor types, separately and in combination, to gain information about the relationships among the variables.

Current Research

As an example of the use of the model, we are currently engaged in an ongoing research project on examining the differences among races with regard to retention. Specifically, Sedlacek and Brooks (1976) proposed that for minorities, especially blacks, other variables than the traditional cognitive ones would be more related to retention. To examine this, several different criteria are being, or are to be, used in analyses: Grade point average, registration status, eventual graduation status, and a four-part nominal variable, enrollment status. Using this variable is a way of determining the overlap between GPA and registration status. In any given semester, a student is: 1) enrolled, and in good academic standing, 2) not enrolled, but in good academic standing, 3) enrolled, and on academic probation, or 4) academically dismissed. The two predictor types are analyzed separately and in combination with each of the above retention criteria. The traditional cognitive predictors being used are SAT scores. The specific noncognitive predictors of interest are the seven variables hypothesized by Sedlacek (1977) to be related to retention, especially for minority students. These noncognitive variables are as follows: positive self-concept, realistic self-appraisal, understanding and dealing well with racism, preferring long-range goals to short range goals, availability of a strong support person, leadership experience, and demonstrated community service. A questionnaire was designed to assess each of these dimensions and was administered to incoming freshmen during summer orientation. The relationships of these seven noncognitive dimensions, alone and in combination with SAT scores, to each of the four different definitions of retention are to be examined.

At this time, enrollment and registration patterns have not had enough time

to become apparent, so only the analyses using GPA as the criterion of success have been performed. For the first semester GPA, there appears to be a strong relationship between the seven noncognitive predictors and retention, especially for minority students. When SAT scores were used with the noncognitive measures, many of the previously significant noncognitive items were no longer significant, especially in the white sample. This trend occurred less in the minority analyses. So it appears that for whites, these noncognitive predictors are tapping dimensions that overlap or are related to the traditional SAT scores, but this is not true for blacks. For blacks, traits separate from what is measured by SAT scores appear to be related to GPA for the first semester. Thus, by using the model proposed here, we obtain a more comprehensive view of the variables related to retention. These results are preliminary, and are presented only as an example of the research model. More time is needed to further substantiate these findings and to determine others.

Recommendations

Those doing research in retention and those designing programs based on research results should be aware of the problems and limitations in retention research. Attempts should be made to make retention research as inclusive as possible to better represent the complexity of this important issue. The model presented is one possible way of moving in this direction.

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Figure 1.

TYPES OF STUDENT RETENTION STUDIES

Criteria of College Success

Predictor Variables	Grade Point Average	Enrolled/ Not Enrolled	Graduated/ Not Graduated	Less Traditional Criteria
Traditional Cognitive (e.g., SAT, ACT, HSGPA)	Predicting * who will succeed			
Noncognitive (Cultural or personality dimensions)		Evaluating* program interventions	Understanding* characteristics related to retention	
Combined Cognitive and Noncognitive				

* Type of studies commonly conducted